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14. WINTER TEMPERATURE GRADIENT IN TUNNELS OF *UROMASTYX HARDWICKII* GRAY

During winter reptiles are said to hibernate and normal activity is thought to be absent. Hence it had been presumed that they have no predatory role to play. However, recent studies on burrow temperatures in two marked colonies in Delhi region have revealed an altogether different picture that indicates only partial hibernation in *Uromastyx hardwickii* species during winter as is evident from open burrow mouths and burrow temperatures. Tunnel temperature is near to "activity temperature" and ranges from 20.5°C to 25.5°C in plugged burrows. Whereas, in open burrows it ranges from 21.5°C to 22.5°C during mid day at depths ranging 10 to 25 cm within the tunnel and at surface temperature of 20°C to 23°C in dry bulb. This tunnel temperature is somewhat close to their "activity temperature" recorded in summer season from about 28°C onwards to 35°C above which onset of panting occurs (Bhatnagar *et al.* 1973 & *in press*). Tunnel temperature at neck region appears to be independent of the 'tunnel slope' & depths varying before the point tunnel bend commences, normally ranges from 35-140 cm in Delhi region and as temperature ranges were nearly same. Variation in thickness of "clay plug"

at burrow mouths ranged from 2.5 to 11.5 cm, yet, temperature fluctuation was not significantly different. Out of 39 burrows, 10 were found open and 29 were plugged and there is not much difference in temperature. It perhaps indicates that there is no total hibernation in the individuals as is also evident from, the marks on the soil indicating locomotory activity of the lizard and by presence of undigested food in gut of lizards. Individuals on attaining the 'activity temperature' after basking resume daily activity around mid day. In one burrow, presence of ants emerging out of burrow perhaps indicate death of the lizard in the burrow at this temperature. Presence of smaller 'clay plug' also indicates resumption of activity on attaining of required temperature. It may be mentioned here that this tunnel temperature during winter is not much lower than what it ranges during summer, i.e. at surface temperature of 28° - 35°C, it ranges upto 26.2°C at depth of 12 cm from mouth. It further indicates that burrow making is a thermoregulatory adaptation in which temperature is well maintained and activity depends upon burrow temperature rather than on surface temperature.

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15. IDENTIFICATION OF SNAKE SKINS

(With two plates)

Madras and Calcutta are the two major centres where snake skins are tanned and exported. It may be interesting to note that from Madras a total number of 7,83,100 pieces of snake skins, valued at Rs. 1,35,99,320 have been exported between 1.1.76 and 31.12.76. Similarly during 1977, a total number of 6,38,750 pieces valued at Rs. 90,26,941 have been exported. For Calcutta the figures are as follows: during 1976 a record number of 15,23,626 skins valued at Rs. 68,89,565 and for 1977, about 10,99,192 skins valued at Rs. 1,01,97,391 have been exported. Mostly these skins are purchased by West Germany, U.K., Italy and France. It is also worthwhile to note that it is mainly skins of the Rat snake or Dhaman (*Ptyas mucosus*), that is being exported, while export of others like that of Cobra, Python, Russel's viper is almost negligible.

Identification of snakes, usually is done by the study of scales in the belly, the head and the back — whether it is scaly and uniform throughout or whether ventral shields extend the whole width or not and so on. All these processes are no doubt the best conclusive

proof to know whether a snake is poisonous or otherwise. Unfortunately in identification of tanned skins meant for export, it is usually not possible to make use of these characteristics. It is for this simple reason that one cannot know whether the ventral plates extend the whole width of the belly or not. Also very rarely can one see all scales and shields on the head intact and in proper position.

The common snake skins that were being exported on a large scale belong to the following species:

- 1) Rat Snake or Dhaman.
- 2) The Indian Python.
- 3) The Common Cobra.
- 4) Russell's Viper.

Skins of the above snakes can be identified by the following characteristics:

Rat Snake:— Rat snake's skins are erroneously called "Whip-snake skins" by the trade. The real whip snake, however, is the common green whip snake (*Ahaetulla nasutus*), so called because of its very long, thin, whip-like body.

Rat snakes grow to a length of about 240 cm or even more and have a girth of about